Appl. No. 10/611,315
Amdt. Dated June 13, 2007
Reply to Office Action of February 16, 2007

Attorney Docket No. 83394.0008
Customer No. 26021

REMARKS

This application has been carefully reviewed in light of the Office Action dated February 16, 2007. Claims 1-8 remain in this application. Claim 1 is the independent Claim. It is believed that no new matter is involved in the arguments presented herein. Reconsideration and entrance of the amendment in the application are respectfully requested.

Art-Based Rejections

Claims 1-4, 7 were rejected under 35 U.S.C. § 102(b) over U.S. Patent No. 6,199,126 B1 (Auerbach). Claims 5 and 6 were rejected under 35 U.S.C. § 103(a) over Auerbach in view of U.S. Patent No. 6,691,305 (Henkel). Applicant respectfully traverses the rejections and submits that the claims herein are patentable in light of the arguments below.

The Auerbach Reference

Auerbach is directed to an apparatus and method for transparent on-the-fly decompression of the program instruction stream of a processor. According to Auerbach, a decompression device is connected between a processor and a memory storing compressed information. The decompression device receives a request from the processor for information, retrieves compressed information from the memory, decompresses the retrieved compressed information to form uncompressed information, and transmits the uncompressed information to the processor. The compressed information may include both program instructions and data. When the decompression device receives a request for information, which includes an unmodified address, from the processor, it generates an index offset from the received unmodified address. An indexed address corresponding to the generated

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index offset is retrieved from an index table. Compressed information corresponding to the selected indexed address is retrieved from the memory and transmitted to the processor (*Auerbach Abstract*).

The Henkel Reference

Henkel is directed to a method and apparatus for compressing and decompressing object code instructions that are included in a software program that executes on a computer system. (*See Henkel: Col. 1, lines 16-20*). According to Henkel, the method includes extracting compressible instruction and data portions from executable code, creating a mathematical model of the extracted code portions, class the individual instructions in the extracted potions based upon their operation codes and compressing the instructions. (*Henkel Abstract*).

The Claims are Patentable Over the Cited References

The present application is generally directed to micro controller that processes compressed codes stored in a memory.

As defined by independent Claim 1, a micro controller includes a CPU, performing processing in accordance with a program. The micro controller further includes a memory storing: compressed codes resulting from the conversion of original codes into variable length codes; an address conversion information specifying the head address of each group of grouped compressed codes of variable lengths; and a compressed code type information specifying, according to each group, the code length of each compressed code of variable lengths contained in each group. A compressed code processing part specifies, from a code address output by the CPU, an address conversion information and compressed code type information to be referred, using the specified address conversion information and the

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compressed code type information to determine the corresponding compressed code address, and reads the corresponding compressed code.

The applied references do not disclose or suggest the features of the present invention as recited by the claims as amended. In particular, applied references do not disclose or suggest "a memory, storing: ...a compressed code type information, specifying, according to each group, the code length of each compressed code of variable lengths contained in each group" as recited in the amended independent Claim 1.

The Office Action's position relies on the teaching of Auerbach. However, Auerbach discloses at col. 9, lines 43-49 that the entire 6-bit filed is required to indicate the length of the first compressed <u>block</u> (up to 63 bytes). In particular, Auerbach discloses the compressed address space **920** for a 64-byte block **902a** can be determined with the Offset to Next (6 bits) **914a** (*Auerbach at FIG. 9; col. 8, lines 61 – col. 9, line 3*).

Auerbach thus cannot disclose or suggest the compressed code type information specifying the code length of <u>each compressed code of variable lengths contained in each group (block)</u>, as recited in independent Claim 1.

In contrast, independent Claim 1 recites the memory storing the compressed code type information. As illustrated in FIG. 4A and 4B of Specification, the address conversion information for block 1 is stored in the address conversion information area **21**. Moreover, FIG. 7A and 7B illustrate that the compressed code type information for the block 1 is stored in the compressed type information **21**. The compressed code type information for the block 1 includes length of each compressed, as illustrated in FIG. 6. Accordingly, each piece of the compressed code type information indicates a length of each of 16 pieces of the block 1 (*Specification FIG. 3A and 3B*).

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Moreover, the applied references do not disclose or suggest "a compressed code processing part..., using the specified address conversion information and the compressed code type information to determine the corresponding compressed code address" recited in independent Claim 1.

According to Auerbach, the compressed instruction is retrieved after calculating offset into an index table, retrieving the index from the index table, and then calculating address of compressed instruction block using the index table entry (*Auerbach at col. 7, lines 20-30*).

In contrast, the microcontroller recited in independent Claim 1 requires the use of the specified address conversion information and the compressed code type information to determine the corresponding compressed code address. In particular, the features of independent Claim 1 allow a CPU to calculate the address of the compressed code by calculating a sum of the compression type information up to the compressed code address.

Accordingly, Auerbach does not disclose or suggest the features of independent Claim 1. The ancillary Henkel reference is not seen to seen to remedy the deficiencies of Auerbach.

Since the applied references, alone or in combination, do not disclose or suggest the features of the present invention as recited by independent Claim 1, those references cannot be said to anticipate nor render obvious the invention which is the subject matter of that claim.

Accordingly, independent Claim 1 is believed to be in condition for allowance and such allowance is respectfully requested.

The remaining claims depend either directly or indirectly from independent Claim 1 and recite additional features of the invention which are neither disclosed nor fairly suggested by the applied references, and are also believed to be in

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condition for allowance. As such, reconsideration and allowance of those claims are respectfully requested.

Conclusion

Applicant believes the foregoing amendments comply with requirements of form and thus may be admitted under 37 C.F.R. § 1.116(b). Alternatively, if these amendments are deemed to touch the merits, admission is requested under 37 C.F.R. § 1.116(c). In this connection, these amendments were not earlier presented because they are in response to the matters pointed out for the first time in the Final Office Action.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, as amended, are requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los Angeles, California telephone number (310) 785-4721 to discuss the steps necessary for placing the application in condition for allowance.

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If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,

HOGAN & HARTSON L.L.P.

Date: June 13, 2007

By:

Dariush G. Adli
Registration No. 51,386
Attorney for Applicant(s)

1999 Avenue of the Stars, Suite 1400
Los Angeles, California 90067
Phone: 310-785-4600
Fax: 310-785-4601

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